

Using visual examination techniques, the sediment samples will be described in the field in general accordance with the Unified Soil Classification System.

Specific sample criteria to be noted includes:

- Sediment Name
- USCS Group Symbol
- Color (Munsell Soil Color Charts, revised 1992)
- Grain size and distribution
- Soil particle lithology
- Gradation
- Plasticity
- Bedding or sedimentary structures
- Chemical precipitates
- Organic material
- Moisture content
- Background odor

Other observations, such as field screening data, visual evidence of contamination or lack thereof, or the presence of debris will also be noted. Observations will be recorded on the field-sampling sheet for future reference. An example Field Sampling Data Sheet is presented in Appendix B. Other information to be noted on the Field Sampling Data Sheet include:

- Project name and location
- Project number
- Geologist's name
- Sample number
- Sample location

Sediment

This SOP describes the decontamination procedures for any non-dedicated sampling equipment, which comes into contact with potentially contaminated sediment. Equipment will be decontaminated as follows:

1. Soap wash (dilute solution of Alconox or equivalent in potable water solution),
2. Distilled water rinse,
3. Hexane rinse,
4. Distilled water rinse.

Any decontamination fluids will be containerized and marked in accordance with Section 7 of this FSP.

Water

This SOP describes the decontamination procedures for any non-dedicated water sampling equipment. Equipment will be decontaminated as follows:

1. Soap wash (dilute solution of Alconox or equivalent in potable water solution),
2. Distilled water rinse,

Any decontamination fluids will be containerized and marked in accordance with Section 7 of this FSP.

This SOP describes the procedure used to collect sediment samples with a box corer.

1. Assemble the coring device by inserting the acetate core into the sampling tube.
2. Insert the check valve mechanisms into the tip of the sampling tube with the convex surface positioned inside the acetate core.
3. Lower the box corer to within approximately six feet of the river bottom using an electric winch.
4. Release the cable when the corer is in position to allow sharp drop into sediment.
5. Immediately after core penetration, reestablish tension on the cable to establish vertical stability.
6. Retrieve the corer with the electronic winch.
7. Lift the corer off of the core liner.
8. Siphon any supernatant water from the surface of the sample being careful to retain fine sediments.
9. Measure core length.
10. Push sediment core upward 6 inches.
11. Inspect and describe core.
12. Collect sample for laboratory submission.
13. Push sediment core upward to collect sample from the 6 to 18 inch interval.

A grab sampler (a Van Veen or ponar sampler) is a 'clamshell' like device that operates using a cantilever trip system. This SOP describes the procedure used to collect sediment samples with a grab sampler.

1. Attach the sampler to an electric winch.
2. Arrange the sampler in the open position, setting the trip bar so the sampler remains open when lifted.
3. Slowly lower the sampler to a point just above the sediment.
4. Drop the sampler sharply into the sediment, then pull sharply up on the line, releasing the trip bar and closing the dredge.
5. Raise the sampler to the surface and slowly decant any free liquid through the screens on top of the dredge. Be careful to retain fine sediments.
6. Open the dredge and transfer the sediment to sampling containers.

A Kemmerer water sampler is a depth-discrete sampler constructed of PVC. This SOP describes the procedure used to collect sediment samples with a grab sampler.

1. Attach the sampler to a cable with depth measurements and to the water quality meter.
2. Deploy the sampler (along with the meter) in the water in the open position, lowering the sampler until the river bottom is reached.
3. Reel up the sampler six inches and wait approximately three minutes for disturbance created by the sampler to dissipate.
4. Take water quality readings for pH, turbidity, dissolved oxygen, conductivity, reduction-oxidation potential, and temperature.
5. Send the messenger down the cable to activate closure.
6. Retrieve the water sample.
7. Agitate the sampler to re-suspend any solids prior to filling sample bottles.
8. Sample bottles not requiring filtration will be filled directly from the sampler.
9. For sample bottles requiring filtration, a disposable 0.7-micron in-line filter will be attached to tubing.
10. Fill the appropriate sample bottles for dissolved parameters with the filtered sample water.

Field Measurement of Water Quality Parameters

Field measurements of water quality parameters will be made with a portable, battery powered water quality meter, such as a Horiba-U22. This SOP describes the procedure used to measure pH, specific conductance, temperature, turbidity, reduction-oxidation potential, and dissolved oxygen in the water column.

1. Calibrate the instrument according to the manufacturer's instructions at the beginning of the day and when deemed necessary.
2. Rinse the sample probe with distilled water.
3. Deploy the water quality meter with the Kemmerer water sampler (see SOP 5).
4. Reel up the sampler six inches and wait approximately three minutes for disturbance created by the sampler to dissipate.
5. Wait for readings to stabilize.
6. Record readings for pH, specific conductance, temperature, turbidity, reduction-oxidation potential, and dissolved oxygen.